Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

NATIONAL GUIDELINE CLEARINGHOUSE

General

Guideline Title

Final recommendation statement: skin cancer prevention: behavioral counseling.

Bibliographic Source(s)

Final recommendation statement: skin cancer prevention: behavioral counseling. [internet]. Rockville (MD): U.S. Preventive Services Task Force (USPSTF); 2018 Mar [9 p]. [48 references]

Guideline Status

This is the current release of the guideline.

This release updates a previously published guideline: U.S. Preventive Services Task Force. Behavioral counseling to prevent skin cancer: U.S. Preventive Services Task Force recommendation statement. Ann Intern Med. 2012 Jul 3;157(1):59-65. [24 references]

This guideline meets NGC's 2013 (revised) inclusion criteria.

NEATS Assessment

National Guideline Clearinghouse (NGC) has assessed this guideline's adherence to standards of trustworthiness, derived from the Institute of Medicine's report Clinical Practice Guidelines We Can Trust.

 = Poor  = Fair  = Good  = Very Good  = Excellent

Assessment	Standard of Trustworthiness
YES	Disclosure of Guideline Funding Source
	Disclosure and Management of Financial Conflict of Interests
	Guideline Development Group Composition

YES	Multidisciplinary Group
YES	Methodologist Involvement
▮▮▯▯▯	Patient and Public Perspectives
	Use of a Systematic Review of Evidence
▮▮▮▮▮	Search Strategy
▮▮▮▮▮	Study Selection
▮▮▮▮▮	Synthesis of Evidence
	Evidence Foundations for and Rating Strength of Recommendations
▮▮▮▮▯	Grading the Quality or Strength of Evidence
▮▮▮▮▮	Benefits and Harms of Recommendations
▮▮▮▮▮	Evidence Summary Supporting Recommendations
▮▮▮▮▮	Rating the Strength of Recommendations
▮▮▮▮▮	**Specific and Unambiguous Articulation of Recommendations**
▮▮▮▯▯	**External Review**
▮▮▮▮▮	**Updating**

Recommendations

Major Recommendations

The U.S. Preventive Services Task Force (USPSTF) grades its recommendations (A, B, C, D, or I) and identifies the levels of certainty regarding net benefit (High, Moderate, and Low). The definitions of these grades can be found at the end of the "Major Recommendations" field.

Recommendation Summary

The USPSTF recommends counseling young adults, adolescents, children, and parents of young children about minimizing exposure to ultraviolet (UV) radiation for persons aged 6 months to 24 years with fair skin types to reduce their risk of skin cancer. (B recommendation)

The USPSTF recommends that clinicians selectively offer counseling to adults older than 24 years with fair skin types about minimizing their exposure to UV radiation to reduce risk of skin cancer. Existing evidence indicates that the net benefit of counseling all adults older than 24 years is small. In determining whether counseling is appropriate in individual cases, patients and clinicians should consider the presence of risk factors for skin cancer. (C recommendation)

The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of counseling adults about skin self-examination to prevent skin cancer. (I statement)

Clinical Considerations

Patient Population under Consideration

This recommendation applies to asymptomatic persons without a history of skin cancer. Because most trials of skin cancer counseling predominantly include persons with fair skin types, the USPSTF limited its recommendation to this population.

Assessment of Risk

Persons with fair skin types (ivory or pale skin, light eye color, red or blond hair, freckles, those who sunburn easily) are at increased risk of skin cancer and should be counseled. Other factors that further increase risk include a history of sunburns, previous use of indoor tanning beds, and a family or personal history of skin cancer. Persons with an increased number of nevi and atypical nevi are at increased risk of melanoma. Persons with a compromised immune system (e.g., persons living with human immunodeficiency virus [HIV], persons who have received an organ transplant) are at increased risk of skin cancer.

Behavioral Counseling Interventions

All studies conducted in children and adolescents focused on sun protection behaviors; most were directed at parents, and some provided child-specific materials or messages. Half of the interventions included face-to-face counseling, and all included print materials. Three studies provided the intervention in conjunction with well-child visits. The majority of studies conducted in young adults and adults focused on improving sun protection behaviors, and 2 studies used "appearance-focused" messages. The mode of delivery varied and included mail-based, face-to-face or telephone counseling, and technology-based (text messages, online programs and modules, personal UV facial photographs) interventions.

Suggestions for Practice Regarding the I Statement

Potential Preventable Burden

Counseling adults about performing skin self-examination appears to result in an increase of such examinations. The potential benefit of behavioral counseling about skin self-examination is uncertain because of the lack of evidence on the link between behavior change and skin cancer or other health outcomes. In addition, there is no evidence about the incremental benefit that might occur with skin self-examination above the benefit from counseling for skin protective behaviors and from current levels of skin examinations being performed by clinicians.

Potential Harms

Skin self-examination is performed by the patient and is noninvasive. Psychosocial harms, such as anxiety or cancer worry, are possible. If skin self-examination leads to biopsy, procedural harms such as pain, bleeding, scarring, or infection could occur.

Current Practice

The frequency of behavioral counseling for skin self-examination in the asymptomatic population is not well known.

Additional Approaches to Prevention

The Community Preventive Services Task Force recommends child care center–based, primary and middle school–based, and multicomponent community-wide interventions for the prevention of skin cancer. These interventions combine school- and community-based communications and policy to increase preventive behaviors (e.g., covering up, using shade, or avoiding the sun during peak UV hours) among certain populations in specific settings.

The U.S. Food and Drug Administration (FDA) provides information to help guide patients and clinicians regarding sun protection and the use and effectiveness of broad-spectrum sunscreen. The FDA has

determined that broad-spectrum sunscreens with a sun-protection factor of 15 or greater, reapplied at least every 2 hours, protect against both UVA and UVB radiation and reduce the risk of skin cancer and early skin aging. The FDA also provides consumer education materials on the dangers of indoor tanning.

The Environmental Protection Agency provides a variety of educational tools regarding sun safety, including state-specific information, and interactive widgets and smartphone applications that forecast UV exposure by zip code or city. It also provides sun safety fact sheets and handouts, including age-appropriate materials.

Useful Resources

The USPSTF has issued a recommendation on screening for skin cancer in adults (see the NGC summary).

Definitions

What the U.S. Preventive Services Task Force (USPSTF) Grades Mean and Suggestions for Practice

Grade	Definition	Suggestions for Practice
A	The USPSTF recommends the service. There is high certainty that the net benefit is substantial.	Offer or provide this service.
B	The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.	Offer or provide this service.
C	The USPSTF recommends selectively offering or providing this service to individual patients based on professional judgment and patient preferences. There is at least moderate certainty that the net benefit is small.	Offer or provide this service for selected patients depending on individual circumstances.
D	The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits.	Discourage the use of this service.
I Statement	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality or conflicting, and the balance of benefits and harms cannot be determined.	Read the "Clinical Considerations" section of the USPSTF Recommendation Statement (see the "Major Recommendations" field). If the service is offered, patients should understand the uncertainty about the balance of benefits and harms.

USPSTF Levels of Certainty Regarding Net Benefit

Definition: The U.S. Preventive Services Task Force defines certainty as "likelihood that the USPSTF assessment of the net benefit of a preventive service is correct." The net benefit is defined as benefit minus harm of the preventive service as implemented in a general, primary care population. The USPSTF assigns a certainty level based on the nature of the overall evidence available to assess the net benefit of a preventive service.

Level of Certainty	Description
High	The available evidence usually includes consistent results from well-designed, well-conducted studies in representative primary care populations. These studies assess the effects of the preventive service on health outcomes. This conclusion is therefore unlikely to be strongly affected by the results of future studies.
Moderate	The available evidence is sufficient to determine the effects of the preventive service on health outcomes, but confidence in the estimate is constrained by factors such as: The number, size, or quality of individual studies

Level of Certainty	Description
	Inconsistency of findings across individual studies Limited generalizability of findings to routine primary care practice Lack of coherence in the chain of evidence As more information becomes available, the magnitude or direction of the observed effect could change, and this change may be large enough to alter the conclusion.
Low	The available evidence is insufficient to assess effects on health outcomes. Evidence is insufficient because of: The limited number or size of studies Important flaws in study design or methods Inconsistency of findings across individual studies Gaps in the chain of evidence Findings not generalizable to routine primary care practice A lack of information on important health outcomes More information may allow an estimation of effects on health outcomes.

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Skin cancer

Guideline Category

Counseling

Prevention

Risk Assessment

Screening

Clinical Specialty

Dermatology

Family Practice

Internal Medicine

Oncology

Preventive Medicine

Intended Users

Advanced Practice Nurses

Nurses

Physician Assistants

Physicians

Guideline Objective(s)

To update the 2012 U.S. Preventive Services Task Force (USPSTF) recommendation on behavioral counseling for the primary prevention of skin cancer and the 2009 USPSTF recommendation on screening for skin cancer with skin self-examination

Target Population

Asymptomatic persons without a history of skin cancer

Note: Because most trials of skin cancer counseling predominantly include persons with fair skin types, the U.S. Preventive Services Task Force (USPSTF) limited its recommendation to this population.

Interventions and Practices Considered

Behavioral counseling to prevent skin cancer

Major Outcomes Considered

- Key question 1: Does counseling patients in skin cancer prevention improve a) intermediate outcomes (sunburn or precursor lesions) or b) skin cancer outcomes (melanoma, squamous cell, or basal cell carcinoma incidence, morbidity, or mortality)?
- Key question 2: Do primary care-relevant counseling interventions improve skin cancer prevention behaviors (e.g., reduced sun exposure, sunscreen use, use of protective clothing, avoidance of indoor tanning, and skin self-examination)?
- Key question 3: What are the harms of counseling interventions for skin cancer prevention (e.g., increased time in the sun, reduced physical activity, vitamin D deficiency, and anxiety)?
- Key question 4: What is the association between skin self-examination and skin cancer outcomes (melanoma, squamous cell, or basal cell carcinoma incidence, morbidity, or mortality)?
- Key question 5: What are the harms of skin self-examination?

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Searches of Unpublished Data

Description of Methods Used to Collect/Select the Evidence

Note from the National Guideline Clearinghouse (NGC): A systematic evidence review was prepared by Kaiser Permanente Evidence-based Practice Center (EPC) for the Agency for Healthcare Research and Quality (AHRQ) for use by the U.S. Preventive Services Task Force (USPSTF) (see the "Availability of Companion Documents" field).

Data Sources and Searches

EPC staff worked with a research librarian to develop the literature search (see Appendix B in the systematic review). All search strategies were peer-reviewed by a second research librarian.

All articles included in the previous USPSTF Evidence Report on Behavioral Counseling for Skin Cancer Screening and in the USPSTF Skin Cancer Screening Evidence Report published in 2009 (note: the 2009 update included literature published between 1999 and 2005) were re-evaluated. For articles published since the previous reviews, the librarian created two search strategies: one for counseling and one for skin self-exam. For counseling on sun protection behaviors they searched for articles published from 2009 to March 31, 2016. For skin self-exam they searched for articles published from August 2005 to March 31, 2016. EPC staff searched Cochrane Central Register of Controlled Trials, Medline, and PubMed, publisher-supplied to locate relevant studies for all key questions (KQs) (Appendix B). Results of the literature search were imported into EndNote. They supplemented the database searches by reviewing reference lists from recent and relevant systematic reviews. They also searched ClinicalTrials.gov and WHO International Clinical Trials Registry Platform (ICTRP) for relevant ongoing trials (see Appendix C in the systematic review). The search was updated on June 7, 2017.

Study Selection

Two reviewers independently reviewed 2,100 titles and abstracts using Covidence, an online platform, and 355 articles (see Appendix B Figure 1 in the systematic review) against specified inclusion criteria (see Appendix B Table 1 in the systematic review). The reviewers resolved discrepancies through consensus and consultation with a third investigator. They excluded articles that did not meet inclusion criteria or those that rated as poor quality.

For all KQs, the population of interest was people of any age without skin cancer, including parents/caregivers of children who would be the focus of a counseling intervention. The reviewers excluded studies where 25 percent or more of the population had a prior history of skin cancer or were otherwise under surveillance for skin cancer. They limited studies to settings with an established link to primary care and in countries categorized as "Very High" in the Human Development Index. They defined primary care-relevant counseling interventions as those that were delivered in primary care settings, judged to be feasible for implementation in primary care, or available for referral from primary care. The reviewers excluded studies set in the community with no link to primary care, at a worksite, within childcare or recreational settings, and mass media campaigns. They included any intervention aimed at improving sun protection behaviors or teaching skin self-exam in a primary care or primary care-linked setting, and excluded multi-component interventions (such as a community-level intervention including media campaigns, screening days, with primary care counseling included) where the effect of primary care-relevant counseling could not be assessed. For comparison groups the reviewers included usual care, assessment-only controls, attention-control groups using an equivalent-intensity intervention on a different health topic, or comparison groups using minimal intervention; they excluded studies comparing two equivalent-intensity skin cancer counseling interventions. For questions on behavioral counseling (KQ1, KQ2, KQ3) they included only randomized or controlled clinical trials. For skin self-exam questions (KQ4, KQ5), trials and prospective cohort studies were eligible for inclusion.

For KQ1, intermediate outcomes were defined as sunburn, nevi, and actinic keratosis, and health outcomes included melanoma, basal cell or squamous cell carcinoma incidence, morbidity or mortality. Behavioral outcomes for KQ2 could be parent- or self-reported outcomes that related to sun protective behaviors (e.g., composite scores, use of protective clothing, sun avoidance, use of sunscreen), skin self-exam, or indoor tanning use. For KQ3, the reviewers included any harm of behavioral counseling interventions or skin self-exam.

Number of Source Documents

See the literature search flow diagram (Appendix B Figure 1) in the systematic review (see the "Availability of Companion Documents" field) for a summary of evidence search and selection.

Articles included for Key Questions (KQs):

KQ 1: 10
KQ 2: 27
KQ 3: 2
KQ 4: 0
KQ 5: 0

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

At least two reviewers critically appraised all articles that met the inclusion criteria based on the U.S. Preventive Services Task Force's (USPSTF's) design-specific quality criteria for trials (see Appendix B Table 2 in the systematic review [see the "Availability of Companion Documents" field]). Articles were rated as good, fair, or poor quality.

Methods Used to Analyze the Evidence

Meta-Analysis

Review of Published Meta-Analyses

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

Note from the National Guideline Clearinghouse (NGC): A systematic evidence review was prepared by Kaiser Permanente Evidence-based Practice Center (EPC) for the Agency for Healthcare Research and Quality (AHRQ) for use by the U.S. Preventive Services Task Force (USPSTF) (see the "Availability of Companion Documents" field).

Quality Assessment and Data Abstraction

In general, a good-quality study met all criteria (see Appendix B Table 2 in the systematic review [see the "Availability of Companion Documents" field]). A fair-quality study did not meet, or it was unclear if it met, at least one criterion but had no known important limitations that could invalidate its results. A poor-quality study had a single fatal flaw or multiple important limitations; poor-quality studies were excluded from this review. Disagreements about critical appraisal were resolved by consensus and, if needed, in consultation with a third independent reviewer.

One reviewer extracted key elements of included studies into a Microsoft Access® database (Microsoft Corporation, Redmond, Washington). A second reviewer checked the data for accuracy. Evidence tables were tailored for each KQ. Tables generally included details on study design and quality, setting and population (e.g., country, inclusion criteria, age, sex, race/ethnicity), intervention details, length of follow-up, measure descriptions, and outcomes.

Data Synthesis and Analysis

The reviewers synthesized results by KQ, using a standardized summary of evidence table to summarize the overall strength of evidence for each. This table included the number and design of included studies, summary of results, reporting bias, summary of study quality, limitations of the body of evidence, and applicability of the findings.

Results for child and adolescent populations and adult populations are reported separately. The data

reported for each population and outcome did not allow for quantitative pooling due to the limited number of contributing studies and the variability of the outcomes measured, a narrative synthesis of results was provided. For sun protection and skin self-exam outcomes (KQ2), forest plots were presented showing the standardized mean differences in change between groups (using the Cohen's *d* statistic) to illustrate the range of effects seen across studies but have not provided pooled estimates given the small number of contributing studies and variability in measures.

Methods Used to Formulate the Recommendations

Balance Sheets

Expert Consensus

Description of Methods Used to Formulate the Recommendations

The U.S. Preventive Services Task Force (USPSTF) systematically reviews the evidence concerning both the benefits and harms of widespread implementation of a preventive service. It then assesses the certainty of the evidence and the magnitude of the benefits and harms. On the basis of this assessment, the USPSTF assigns a letter grade to each preventive service signifying its recommendation about provision of the service (see table below). An important, but often challenging, step is determining the balance between benefits and harms to estimate "net benefit" (that is, benefits minus harms).

U.S. Preventive Services Task Force Recommendation Grid*

Certainty of Net Benefit	Magnitude of Net Benefit			
	Substantial	Moderate	Small	Zero/Negative
High	A	B	C	D
Moderate	B	B	C	D
Low	Insufficient			

**A*, *B*, *C*, *D*, and *I (Insufficient)* represent the letter grades of recommendation or statement of insufficient evidence assigned by the USPSTF after assessing certainty and magnitude of net benefit of the service (see the "Rating Scheme for the Strength of the Recommendations" field).

The overarching question that the USPSTF seeks to answer for every preventive service is whether evidence suggests that provision of the service would improve health outcomes if implemented in a general primary care population. For screening topics, this standard could be met by a large randomized controlled trial (RCT) in a representative asymptomatic population with follow-up of all members of both the group "invited for screening" and the group "not invited for screening."

Direct RCT evidence about screening is often unavailable, so the USPSTF considers indirect evidence. To guide its selection of indirect evidence, the Task Force constructs a "chain of evidence" within an analytic framework. For each key question, the body of pertinent literature is critically appraised, focusing on the following 6 questions:

Do the studies have the appropriate research design to answer the key question(s)?
To what extent are the existing studies of high quality? (i.e., what is the internal validity?)
To what extent are the results of the studies generalizable to the general U.S. primary care population and situation? (i.e., what is the external validity?)
How many studies have been conducted that address the key question(s)? How large are the studies? (i.e., what is the precision of the evidence?)
How consistent are the results of the studies?
Are there additional factors that assist the USPSTF in drawing conclusions (e.g., presence or absence of dose–response effects, fit within a biologic model)?

The next step in the USPSTF process is to use the evidence from the key questions to assess whether there would be net benefit if the service were implemented. In 2001, the USPSTF published an article that documented its systematic processes of evidence evaluation and recommendation development. At that time, the USPSTF's overall assessment of evidence was described as good, fair, or poor. The USPSTF realized that this rating seemed to apply only to how well studies were conducted and did not fully capture all of the issues that go into an overall assessment of the evidence about net benefit. To avoid confusion, the USPSTF has changed its terminology. Whereas individual study quality will continue to be characterized as good, fair, or poor, the term *certainty* will now be used to describe the USPSTF's assessment of the overall body of evidence about net benefit of a preventive service and the likelihood that the assessment is correct. Certainty will be determined by considering all 6 questions listed above; the judgment about certainty will be described as high, moderate, or low.

In making its assessment of certainty about net benefit, the evaluation of the evidence from each key question plays a primary role. It is important to note that the USPSTF makes recommendations for real-world medical practice in the United States and must determine to what extent the evidence for each key question—even evidence from screening RCTs or treatment RCTs—can be applied to the general primary care population. Frequently, studies are conducted in highly selected populations under special conditions. The USPSTF must consider differences between the general primary care population and the populations studied in RCTs and make judgments about the likelihood of observing the same effect in actual practice.

It is also important to note that one of the key questions in the analytic framework refers to the potential harms of the preventive service. The USPSTF considers the evidence about the benefits and harms of preventive services separately and equally. Data about harms are often obtained from observational studies because harms observed in RCTs may not be representative of those found in usual practice and because some harms are not completely measured and reported in RCTs.

Putting the body of evidence for all key questions together as a chain, the USPSTF assesses the certainty of net benefit of a preventive service by asking the 6 major questions listed above. The USPSTF would rate a body of convincing evidence about the benefits of a service that, for example, derives from several RCTs of screening in which the estimate of benefits can be generalized to the general primary care population as "high" certainty (see the "Rating Scheme for the Strength of Recommendations" field). The USPSTF would rate a body of evidence that was not clearly applicable to general practice or has other defects in quality, research design, or consistency of studies as "moderate" certainty. Certainty is "low" when, for example, there are gaps in the evidence linking parts of the analytic framework, when evidence to determine the harms of treatment is unavailable, or when evidence about the benefits of treatment is insufficient. Table 4 in the methodology document listed below (see the "Availability of Companion Documents" field) summarizes the current terminology used by the USPSTF to describe the critical assessment of evidence at all 3 levels: individual studies, key questions, and overall certainty of net benefit of the preventive service.

Sawaya GF, Guirguis-Blake J, LeFevre M, Harris R, Petitti D; U.S. Preventive Services Task Force. Update on the methods of the U.S. Preventive Services Task Force: estimating certainty and magnitude of net benefit. Ann Intern Med. 2007;147:871-5. [5 references].

I Statements

For I statements, the USPSTF has a plan to commission its Evidence-based Practice Centers (EPCs) to collect information in 4 domains pertinent to clinical decisions about prevention and to report this information routinely. This plan is described in the paper: Petitti DB et al. Update on the methods of the U.S. Preventive Services Task Force: insufficient evidence. Ann Intern Med. 2009;150:199-205. www.annals.org

The first domain is potential preventable burden of suffering from the condition. When evidence is insufficient, provision of an intervention designed to prevent a serious condition (such as dementia) might be viewed more favorably than provision of a service designed to prevent a condition that does not cause as much suffering (such as rash). The USPSTF recognized that "burden of suffering" is subjective

and involves judgment. In clinical settings, it should be informed by patient values and concerns.

The second domain is potential harm of the intervention. When evidence is insufficient, an intervention with a large potential for harm (such as major surgery) might be viewed less favorably than an intervention with a small potential for harm (such as advice to watch less television). The USPSTF again acknowledges the subjective nature and the difficulty of assessing potential harms: for example, how bad is a "mild" stroke?

The third domain is cost—not just monetary cost, but opportunity cost, in particular the amount of time a provider spends to provide the service, the amount of time the patient spends to partake of it, and the benefits that might derive from alternative uses of the time or money for patients, clinicians, or systems. Consideration of clinician time is especially important for preventive services with only insufficient evidence because providing them could "crowd out" provision of preventive services with proven value, services for conditions that require immediate action, or services more desired by the patient. For example, a decision to routinely inspect the skin could take up the time available to discuss smoking cessation, or to address an acute problem or a minor injury that the patient considers important.

The fourth domain is current practice. This domain was chosen because it is important to clinicians for at least 2 reasons. Clinicians justifiably fear that not doing something that is done on a widespread basis in the community may lead to litigation. More important, addressing patient expectations is a crucial part of the clinician–patient relationship in terms of building trust and developing a collaborative therapeutic relationship. The consequences of not providing a service that is neither widely available nor widely used are less serious than not providing a service accepted by the medical profession and thus expected by patients. Furthermore, ingrained care practices are difficult to change, and efforts should preferentially be directed to changing those practices for which the evidence to support change is compelling.

Although the reviewers did not explicitly recognize it when these domains were chosen, the domains all involve consideration of the potential consequences—for patients, clinicians, and systems—of providing or not providing a service. Others writing about medical decision making in the face of uncertainty have suggested that the consequences of action or inaction should play a prominent role in decisions.

Rating Scheme for the Strength of the Recommendations

What the U.S. Preventive Services Task Force (USPSTF) Grades Mean and Suggestions for Practice

Grade	Definition	Suggestions for Practice
A	The USPSTF recommends the service. There is high certainty that the net benefit is substantial.	Offer or provide this service.
B	The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.	Offer or provide this service.
C	The USPSTF recommends selectively offering or providing this service to individual patients based on professional judgment and patient preferences. There is at least moderate certainty that the net benefit is small.	Offer or provide this service for selected patients depending on individual circumstances.
D	The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits.	Discourage the use of this service.
I Statement	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality	Read the "Clinical Considerations" section of the USPSTF Recommendation Statement (see the "Major Recommendations" field). If the service is offered, patients should

Grade	Definition	Suggestions for Practice
	or conflicting, and the balance of benefits and harms cannot be determined.	understand the uncertainty about the balance of benefits and harms.

USPSTF Levels of Certainty Regarding Net Benefit

Definition: The U.S. Preventive Services Task Force defines certainty as "likelihood that the USPSTF assessment of the net benefit of a preventive service is correct." The net benefit is defined as benefit minus harm of the preventive service as implemented in a general, primary care population. The USPSTF assigns a certainty level based on the nature of the overall evidence available to assess the net benefit of a preventive service.

Level of Certainty	Description
High	The available evidence usually includes consistent results from well-designed, well-conducted studies in representative primary care populations. These studies assess the effects of the preventive service on health outcomes. This conclusion is therefore unlikely to be strongly affected by the results of future studies.
Moderate	The available evidence is sufficient to determine the effects of the preventive service on health outcomes, but confidence in the estimate is constrained by factors such as: The number, size, or quality of individual studies Inconsistency of findings across individual studies Limited generalizability of findings to routine primary care practice Lack of coherence in the chain of evidence As more information becomes available, the magnitude or direction of the observed effect could change, and this change may be large enough to alter the conclusion.
Low	The available evidence is insufficient to assess effects on health outcomes. Evidence is insufficient because of: The limited number or size of studies Important flaws in study design or methods Inconsistency of findings across individual studies Gaps in the chain of evidence Findings not generalizable to routine primary care practice A lack of information on important health outcomes More information may allow an estimation of effects on health outcomes.

Cost Analysis

The U.S. Preventive Services Task Force (USPSTF) does not consider the costs of providing a service in this assessment.

Method of Guideline Validation

Comparison with Guidelines from Other Groups

External Peer Review

Internal Peer Review

Description of Method of Guideline Validation

Peer Review

Before the U.S. Preventive Services Task Force (USPSTF) makes its final determinations about recommendations on a given preventive service, the Evidence-based Practice Center and the Agency for Healthcare Research and Quality send a draft systematic evidence review to 4 to 6 external experts and

to federal agencies and professional and disease-based health organizations with interests in the topic. The experts were asked to examine the review critically for accuracy and completeness and to respond to a series of specific questions about the document. The draft evidence review is also posted on the USPSTF Web site for public comment. After assembling these external review comments and documenting the proposed response to key comments, the topic team presents this information to the USPSTF in memo form. In this way, the USPSTF can consider these external comments before it votes on its recommendations about the service. Draft recommendation statements are then circulated for comment among reviewers representing professional societies, voluntary organizations, and Federal agencies, as well as posted on the USPSTF Web site for public comment. These comments are discussed before the final recommendations are confirmed.

Response to Public Comments

A draft version of this recommendation statement was posted for public comment on the USPSTF Web site from October 10 to November 6, 2017. In response to public comments, the USPSTF clarified the definition of fair skin type for the purposes of this recommendation. Comments requested more details about the behavioral counseling interventions, and the USPSTF provided additional information on implementation strategies. Several comments requested clarification about why skin self-examination is included in this recommendation; the USPSTF clarified that this recommendation addresses several preventive counseling interventions, including evidence about primary care clinicians counseling patients to perform skin self-examination. The USPSTF also added suggestions for practice regarding the I statement, information on newer technologies, and further information on the evidence for the different age ranges in the recommendations.

Comparison with Guidelines from Other Groups

Recommendations for behavioral counseling for skin cancer prevention were considered from the following groups: the U.S. Surgeon General, American Cancer Society, American College of Obstetricians and Gynecologists, American Academy of Pediatrics, Royal Australian College of General Practitioners, World Health Organization's International Agency for Research on Skin Cancer, Community Preventive Services Task Force, American Academy of Dermatology, Skin Cancer Foundation.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of evidence supporting the recommendations is not specifically stated.

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Benefits of Behavioral Counseling Interventions

Behavioral counseling interventions target sun protection behaviors to reduce ultraviolet (UV) radiation exposure. UV radiation is a known carcinogen that damages deoxyribonucleic acid (DNA) and causes most skin cancer cases. A substantial body of observational evidence demonstrates that the strongest connection between UV radiation exposure and skin cancer results from exposure in childhood and adolescence. Sun protection behaviors include the use of broad-spectrum sunscreen with a sun-protection factor of 15 or greater; wearing hats, sunglasses, or sun-protective clothing; avoiding sun exposure; seeking shade during midday hours (10 am to 4 pm); and avoiding indoor tanning bed use.

The U.S. Preventive Services Task Force (USPSTF) found adequate evidence that behavioral counseling interventions available in or referable from a primary care setting result in a moderate increase in the use of sun protection behaviors for persons aged 6 months to 24 years with fair skin types.

The USPSTF found adequate evidence that behavioral counseling interventions available in or referable from a primary care setting result in a small increase in the use of sun protection behaviors for persons older than 24 years with fair skin types.

The USPSTF found insufficient evidence regarding the benefits of counseling adults about skin self-examination to prevent skin cancer.

Potential Harms

Harms of Behavioral Counseling Interventions

The U. S. Preventive Services Task Force (USPSTF) found adequate evidence that the harms related to behavioral counseling interventions and sun protection behaviors in young persons or adults are small. The USPSTF found inadequate evidence regarding the harms of counseling adults about skin self-examination.

Qualifying Statements

Qualifying Statements

- The U.S. Preventive Services Task Force (USPSTF) makes recommendations about the effectiveness of specific preventive care services for patients without obvious related signs or symptoms.
- It bases its recommendations on the evidence of both the benefits and harms of the service and an assessment of the balance. The USPSTF does not consider the costs of providing a service in this assessment.
- The USPSTF recognizes that clinical decisions involve more considerations than evidence alone. Clinicians should understand the evidence but individualize decision making to the specific patient or situation. Similarly, the USPSTF notes that policy and coverage decisions involve considerations in addition to the evidence of clinical benefits and harms.
- Recommendations made by the USPSTF are independent of the U.S. government. They should not be construed as an official position of Agency for Healthcare Research and Quality (AHRQ) or the U.S. Department of Health and Human Services.

Implementation of the Guideline

Description of Implementation Strategy

The experiences of the first and second U.S. Preventive Services Task Force (USPSTF), as well as that of other evidence-based guideline efforts, have highlighted the importance of identifying effective ways to implement clinical recommendations. Practice guidelines are relatively weak tools for changing clinical practice when used in isolation. To effect change, guidelines must be coupled with strategies to improve their acceptance and feasibility. Such strategies include enlisting the support of local opinion leaders, using reminder systems for clinicians and patients, adopting standing orders, and audit and feedback of information to clinicians about their compliance with recommended practice.

In the case of preventive services guidelines, implementation needs to go beyond traditional dissemination and promotion efforts to recognize the added patient and clinician barriers that affect preventive care. These include clinicians' ambivalence about whether preventive medicine is part of their

job, the psychological and practical challenges that patients face in changing behaviors, lack of access to health care or of insurance coverage for preventive services for some patients, competing pressures within the context of shorter office visits, and the lack of organized systems in most practices to ensure the delivery of recommended preventive care.

Dissemination strategies have changed dramatically in this age of electronic information. While recognizing the continuing value of journals and other print formats for dissemination, the USPSTF will make all its products available through its Web site . The combination of electronic access and extensive material in the public domain should make it easier for a broad audience of users to access USPSTF materials and adapt them for their local needs. Online access to USPSTF products also opens up new possibilities for the appearance of the pocket-size *Guide to Clinical Preventive Services*.

To be successful, approaches for implementing prevention have to be tailored to the local level and deal with the specific barriers at a given site, typically requiring the redesign of systems of care. Such a systems approach to prevention has had notable success in established staff-model health maintenance organizations, by addressing organization of care, emphasizing a philosophy of prevention, and altering the training and incentives for clinicians. Staff-model plans also benefit from integrated information systems that can track the use of needed services and generate automatic reminders aimed at patients and clinicians, some of the most consistently successful interventions. Information systems remain a major challenge for individual clinicians' offices, however, as well as for looser affiliations of practices in network-model managed care and independent practice associations, where data on patient visits, referrals, and test results are not always centralized.

Implementation Tools

Mobile Device Resources

Patient Resources

Pocket Guide/Reference Cards

Quick Reference Guides/Physician Guides

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Staying Healthy

IOM Domain

Effectiveness

Patient-centeredness

Identifying Information and Availability

Bibliographic Source(s)

Final recommendation statement: skin cancer prevention: behavioral counseling. [internet]. Rockville (MD): U.S. Preventive Services Task Force (USPSTF); 2018 Mar [9 p]. [48 references]

Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2018 Mar

Guideline Developer(s)

U.S. Preventive Services Task Force - Independent Expert Panel

Guideline Developer Comment

The U.S. Preventive Services Task Force (USPSTF) is a federally-appointed panel of independent experts. Conclusions of the USPSTF do not necessarily reflect policy of the U.S. Department of Health and Human Services (DHHS) or its agencies.

Source(s) of Funding

The U.S. Preventive Services Task Force (USPSTF) is an independent, voluntary body. The US Congress mandates that the Agency for Healthcare Research and Quality (AHRQ) support the operations of the USPSTF.

Guideline Committee

U.S. Preventive Services Task Force (USPSTF)

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*Members of the U.S. Preventive Services Task Force (USPSTF) at the time this recommendation was finalized. For a list of current Task Force members, go to http://www.uspreventiveservicestaskforce.org/Page/Name/our-members.

Financial Disclosures/Conflicts of Interest

The U.S. Preventive Services Task Force (USPSTF) has an explicit policy concerning conflict of interest. All members disclose at each meeting if they have a significant financial, professional/business, or intellectual conflict for each topic being discussed. USPSTF members with conflicts may be recused from discussing or voting on recommendations about the topic in question.

Conflict of Interest Disclosures

All authors have completed and submitted the International Committee of Medical Journal Editors (ICMJE) Form for Disclosure of Potential Conflicts of Interest. Authors followed the policy regarding conflicts of interest described at https://www.uspreventiveservicestaskforce.org/Page/Name/conflict-of-interest-disclosures. All members of the USPSTF receive travel reimbursement and an honorarium for participating in USPSTF meetings.

Guideline Status

This is the current release of the guideline.

This release updates a previously published guideline: U.S. Preventive Services Task Force. Behavioral counseling to prevent skin cancer: U.S. Preventive Services Task Force recommendation statement. Ann Intern Med. 2012 Jul 3;157(1):59-65. [24 references]

This guideline meets NGC's 2013 (revised) inclusion criteria.

Guideline Availability

Available from the U.S. Preventive Services Task Force (USPSTF) Web site.

Availability of Companion Documents

The following are available:

Evidence Reviews:

> Henrikson NB, Morrison CC, Blasi PR, Nguyen M, Shibuya KC, Patnode CD. Behavioral counseling for skin cancer prevention: evidence report and systematic review for the U.S. Preventive Services Task Force. JAMA. 2018 Mar 20;319(11):1143-57.
> Henrikson NB, Morrison CC, Blasi PR, Nguyen M, Shibuya KC, Patnode CD. Behavioral counseling for skin cancer prevention: a systematic evidence Review for the U.S. Preventive Services Task Force. Evidence Synthesis. No. 161. AHRQ Publication No. 17-05234-EF-1. Rockville (MD): Agency for Healthcare Research and Quality; 2018 Mar. 122 p.

Available from the U.S. Preventive Services Task Force (USPSTF) Web site.

The following is also available:

> Clinical summary: behavioral counseling to prevent skin cancer. Rockville (MD): U.S. Preventive Services Task Force; 2018 Mar. 1 p. Available from the USPSTF Web site.

The Electronic Preventive Services Selector (ePSS) is an application designed to provide primary care clinicians and health care teams timely decision support regarding appropriate screening, counseling and preventive services for their patients. It is based on the current, evidence-

based recommendations of the USPSTF and can be searched by specific patient characteristics such as age, sex, and selected behavioral risk factors.

Patient Resources

Myhealthfinder is a tool that provides personalized recommendations for clinical preventive services specific to the user's age, gender, and pregnancy status. It features evidence-based recommendations from the U.S. Preventive Services Task Force (USPSTF) and is available at www.healthfinder.gov .

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC Status

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